Introduction to Michigan's Storage Tank Requirements



• • • Webinar Set Up

- o All lines will be muted
- Questions can be sent to us via the question/chat box
- o We will record webinar and post online



Introduction to Michigan's Storage Tank Requirements



• • Presented by

- o R. Jeff Tanner, Engineer
- Michigan Department of Environmental Quality – Storage Tanks & Contracts Unit (ST&CU)
- o 517-335-2137 (phone #)
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• • Hydrogen Rules

- Went into effect on May, 1, 2008.
 Adopt by reference National Fire Protection Association (NFPA)
 pamphlets 50A and 50B, with state specific additions and amendments.
- Governs all liquid systems and gaseous hydrogen systems







Compressed Natural Gas Rules

- Went into effect on January 13, 1996
- Adopt by reference NFPA 52, 1992 edition
- Govern all Compressed Natural Gas dispensing systems



Storage and Handling of Liquefied Petroleum Gases

- Current rules took affect on July 7, 2008
- The rules adopt by reference NFPA 58, 2004 edition, with state specific additions and amendments
- Govern all Liquefied Petroleum Gas systems







Flammable & Combustible Liquid (FL/CL) Rules

- Latest version went into effect on August 13, 2003.
- Adopt by reference with state specific additions and amendments NFPA 30 and 30A 2000 Editions, NFPA 31 2001 Edition, and NFPA 37 1998 Edition.
- Govern all tanks with a Flashpoint less than 200 degrees Fahrenheit





Michigan Underground Storage Tanks Rules (MUSTR)

- Recent amendments to the 1998/1999
 MUSTR took effect on July 12, 2008.
- Governs all Underground Storage Tank's (UST's) greater than 110 gallons in size that store a petroleum product or a listed hazardous substance.







• • Reviews Required When...

 Hydrogen – Any liquid storage and any gaseous over 400 standard cubic feet, form EQP-5240, site sketch, fee.





MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE AND HAZARDOUS MATERIAL P O Box 30241 Lansing, MI 48909-7741

APPLICATION FOR INSTALLATION OF HYDROGEN STORAGE SYSTEMS

This information is required under Act 207 of the Public Acts of 1941, as amended, being Section 29.5c of the Michigan Compiled Laws Annotated

The item numbers are referenced in the attached typical installation of a Hydrogen Storage Tank. The system must be in co

and Handling of Liquefied and Gaseous Hydrogen (H2) Rules, 2007 AACS R 29.7001 et seq. The manufacturer and part number the appropriate item. For emergency generator containers please see Part 5 of the FL/CL Rules for additional requirements ns to the Storage Tank Unit at 517-335-7211 or e-mail at DEQ-STD-TANKS@michigan.gov. For detailed instructions, see Page FACILITY ID NUMBER NEW ASSIGNED CONTAINER NUMBER(S) AREA CODE & TELEPHONE N CONTACT PERSON, TRAINED TADDRESS (PO BOX NOT ACCEPTABLE) ZIP CODE STATE COUNTY MI AREA CODE & TELEPHONE N OWNER ADDRESS ZIP CODE STATE AREA CODE & TELEPHONE N AME/COMPANY STREET ADDRESS ZIP CODE STATE

• • Reviews Required When...

CNG – Any dispensing system for vehicles, form EQP-3860, site sketch, fee.





WICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE AND HAZARDOUS MATERIALS P O BOX 30241, LANSING MI 48909-7741

APPLICATION FOR INSTALLATION (PLAN REVIEW) OF COMPRESSED NATURAL GAS (CNG) FUELING FACILITIES

tion is required under Act 207 of the Public Acts of 1941, as amended, being Section 29.5c of the Michigan Compiled Laws Annotated. Any owner or submits false information shall be subject to a misdemeanor and/or civil penalties not to exceed \$5000 per day for each tank for which notification or for which false information is submitted.

FORM IS TO BE USED AS A GUIDELINE. IT IS NOT INTENDED TO LIST ALL OF THE REQUIREMENTS THAT MAY BE USTALLATIONS THAT WERE IN COMPLIANCE WITH PREVIOUS RULES DO NOT HAVE TO ALTER EQUIPMENT I ESS SPECIFICALLY REQUIRED TO DO SO. A PLAN REVIEW FEE OF \$203, PER 18,500 SCF, MUST BE INCLUDING PLEASE DIRECT ANY QUESTIONS TO THE TECHNICAL REVIEW UNIT AT 517-335-2690.

	NEW ASSIGNED TANK NUMBER(S)		FACILITY ID NUMBER
EET ADDRESS (PO BOX NOT ACCEPTABLE)		PERSON (AT LOCATION)	AREA CODE & TELEPHI
	STATE	COUNTY	ZIP CODE
NAME		DDRESS	AREA CODE & TELEPH
			ZIP CODE
Total SCFM:	4==	Number of storage cylinders:	Total SCF capacity:
	NOT ACCEPTABLE)	NOT ACCEPTABLE) CONTACT F STATE STREET AD STATE	NOT ACCEPTABLE) CONTACT PERSON (AT LOCATION) STATE COUNTY STREET ADDRESS STATE

• • Reviews Required When...

 LPG – Any dispensing systems, tanks larger than 2,000 gallon individual or 4,000 aggregate, form EQP-3861, site sketch, fee.





MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY WASTE AND HAZARDOUS MATERIALS DIVISION P O Box 30241 Lansing, MI 48909-7741

APPLICATION FOR INSTALLATION OF LIQUEFIED PETROLEUM GAS FACILITIES

AME	NEW ASSIGNED TAI	NK NUMBER(S)		FACILITY ID NUMBER
FREET ADDRESS (PO BOX NOT ACCEPTABLE)	CONTACT PERSON (AT LOCATION) AREA CODE & TELEPH		AREA CODE & TELEPHONE (
	COUNTY		MI	ZIP CODE
S NAME	STREET ADDRESS	THEA		AREA CODE & TELEPHONE
	STATE			ZIP CODE
DESCRIPTION		MANUF	ACTUR	ER & PART NUMBER
INTAINER DESIGN: ction 5.2: 0 psi working pressure				
INTAINER SUPPORTS/INSTALLATION: ction 5.2.7 & 6.6.3: ncombustible; steel protection may be required.			HI S	

• • Reviews - Continued

 FL/CL – Any tank larger than 1,100 gallons in capacity, form EQP-3859, site sketch, fee.





MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE AND HAZARDOUS MATERIALS E P O Box 30241 Lansing, MI 48909-7741

APPLICATION FOR INSTALLATION OF ABOVEGROUND STORAGE TANKS

This information is required under Act 207 of the Public Acts of 1941, as amended, being Section 29.5c of the Michigan Compiled Laws Annotated

IONS: The item numbers are referenced in the attached typical installation of an Aboveground Storage Tank. The system must with the Storage and Handling of Flammable and Combustible Liquids (FL/CL) Rules, 2003 AACS R 29.5101 et seg. The manufactur must be indicated next to the appropriate item. For installations involving container and portable tank storage, please see Part 2, Chap Rules for additional requirements. For bulk plants, industrial plants, chemical plants, processing plants, refineries and distilleries, please pter 5 of the FL/CL Rules for additional requirements. For emergency generator tanks please see Part 5 of the FL/CL Rules for additional requirements. For emergency generator tanks please see Part 5 of the FL/CL Rules for additional requirements. For emergency generator tanks please see Part 5 of the FL/CL Rules for additional requirements. For emergency generator tanks please see Part 5 of the FL/CL Rules for additional requirements. For emergency generator tanks please see Part 5 of the FL/CL Rules for additional requirements. For emergency generator tanks please see Part 5 of the FL/CL Rules for additional requirements. For emergency generator tanks please see Part 5 of the FL/CL Rules for additional requirements. For emergency generator tanks please see Part 5 of the FL/CL Rules for additional requirements.

NAME	NEW ASSIGNED TANK NUMBER(S)		FACILITY ID NUMBER
STREET ADDRESS (PO BOX NOT ACCEPTABLE)	CONTACT PERSON (AT LOCATION)		AREA CODE & TELEPHONE NUM
	COUNTY	STATE	ZIP CODE
AME	OWNER ADDRESS		AREA CODE & TELEPHONE NUI
	STATE		ZIP CODE
R'S NAME	STREET ADDRESS		AREA CODE & TELEPHONE NU
			ZIP CODE

• • Reviews - Continued

 UST – Any regulated tank system, form EQP-3820, site sketch.





MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE AND HAZARDOUS MATERIALS DIVISION P O Box 30241 Lansing, MI 48909-7741

NOTICE OF PROPOSED INSTALLATION OF UNDERGROUND STORAGE TANKS Pre-Registration for Underground Storage Tanks

ion is required under Part 211, Underground Storage Tank Regulations, of the Natural Resources and Environmental Protection Act, 1994 PA 451, ing Sections 324.21101 through 324.21113 of the Michigan Compiled Laws Annotated. A person who violates Part 211 or a rule promulgated under night submits false information shall be subject to a misdemeanor and/or civil penalties not to exceed \$5000 per day for each tank for which notificate information is submitted.

ONS: This "Notice" must be completed and submitted to the Waste & Hazardous Materials Division (WHMD) a minimum of 45 days of the underground storage tank system. THE UST SYSTEM SHALL NOT BE BROUGHT INTO USE UNTIL A REGISTRATION DUND STORAGE TANKS, FORM EQP3821, IS COMPLETED AND SUBMITTED TO THE WHMD ALONG WITH THE \$100.00 FOR TION FEE. Complete the required information in accordance with the Michigan Underground Storage Tank Rules (MUSTR), 1999 at seg. and the Storage and Handling of Flammable and Combustible Liquids (FL/CL) Rules, 2003 AACS R 29.5101 at seg. Parts I installations as cited below. The manufacturer and part number must be indicated next to the appropriate item. The item number to the Typical Underground Storage Tank Installation diagram attached. This form is not intended to list all of the requirements the Mail the completed form to Waste And Hazardous Materials Division, P.O. Box 30157, Lansing, Michigan 48909-7657. Please dis the Storage Tank Unit at 517-335-7211 or e-mail DEC-STD-TANKS@michigan.gov.

	NEW ASSIGNED TANK NUMBER(S)		FACILITY NUMBER
EET ADDRESS (PO BOX NOT ACCEPTABLE)	CONTACT PERSON (AT LOCATION)		AREA CODE & TELEPHONE
	COUNTY	STATE MI	ZIP CODE
NAME	STREET ADDRESS		AREA CODE & TELEPHONE
	STATE		ZIP CODE
	ITEM		MANUFACTURER & DAR

• • Fees

- Public Act 207 of 1941 as Amended Tanks (Hydrogen, CNG, LPG, & FL/CL) Review fee of \$141.50 per tank plus a yearly fee of \$61.50 per tank per year.
- All UST's, no review fee, yearly fee of \$100 per tank per year.



• • Tank Closures

 PA 207 of 1941 Tanks (Hydrogen, CNG, LPG, FL/CL) fill out and send in form EQP 3858.



DEM MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - STORAGE TANK DIVISION

CHANGE OF INFORMATION FORM ABOVEGROUND TANKS ONLY

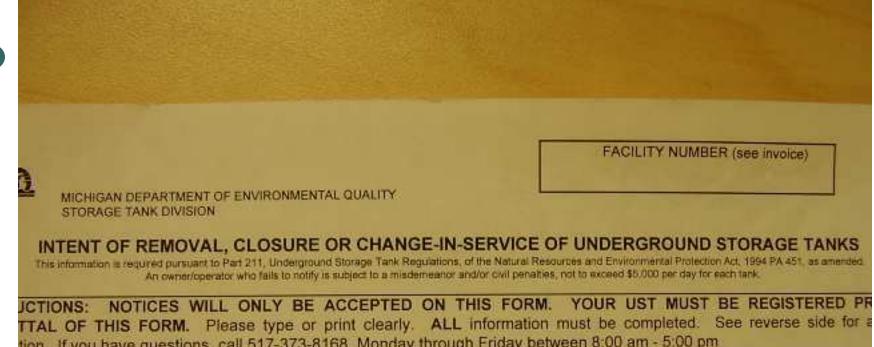
	LOCATION NAME OR S	ITE IDENTIFIER	FACILITY NUMBER
	FACILITY STREET ADD	RESS (PO BOX NOT ACCEPTABLE)	AREA CODE & TEL
	CITY	1 12 12 1	ZIP CODE
(P	STATE	ZIP	
PHONE NUMBER	CONTACT PERSON (A	r LOCATION)	
CILITY		TYPE OF REPORT	
ombustible Liquids Storage eum Gas Storage stural Gas		New Owner Closure of Facility (All Storage) Closure of Tanks Tank(s) Returned to Service	

• • Tank Closures

 UST's fill out and send in form EQP 3821, amended registration, EQP 3824 Intent of Removal, and either a confirmed release or a site assessment showing clean closure (the site assessment must be submitted on form EQP 3881).



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE AND HAZARDOUS MATERIA REGISTRATION OF UNDERGROUND STORAGE TANKS mation in this form is required under "Part 211, Underground Storage Tank Regulations, of the Natural Resources and Environ 451, as amended." Any owner who knowingly fails to notify or submits false information shall be subject to a misdemeanor and 5,000 per day for each tank for which notification is not given or for which false information is submitted. If sending payment and form mail to: MDEQ, Office of Financial Management, **W REGISTRATION** Revenue Control Unit, PO Box 30657, Lansing, MI 48909 ENDED INFORMATION If sending form only, mail to: MDEQ, WHMD, PO Box 30241, Lansing, MI 48909 Registered USTs Only) TANKS AT FACILITY NO. OF CONTINUATION SHEETS ATTACHED II. LOCATION OF TANKS I. OWNERSHIP OF TANKS IF INFORMATION IS THE SAME AS SECTION I THIS IS A NEW OWNER'S ADDRESS, PLEASE CHECK [FACILITY NAME OR SITE IDENTIFIER NAME (Corporation/Individual, etc.) STREET ADDRESS (P.O. Box Not Acceptable)



1. OV	NERSHIP OF TANKS	II. LOC	ATION OF TANKS
PLEASE CH	IECK IF NEW OWNER'S ADDRESS	PLEASE CH	HECK IF SAME AS SECTION I
OWNER (CORPORATION,		FACILITY NAME OR COMPANY SITE JOE	NTIFIER
DDRESS		STREET ADDRESS (P.O. Box Not Accepte	ible)
	STATE ZIP CODE	CITY	STATE ZIP CO
			TOWNSHIP
Section 1	TOWNSHIP	COUNTY	
JE & TELEPHONE NUMBE	R	CONTACT PERSON FOR LOCATION	AREA CODE & TELEPHONE N



MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY - WASTE AND HAZARDOUS MATERIALS DIVISION

UNDERGROUND STORAGE TANK SYSTEM SITE ASSESSMENT REPORT AND CLOSURE OR CHANGE-IN-SERVICE REGISTRATION FORM

Information is required under Part 211, Underground Storage Tank Regulations, of the Natural Resources and Environmental Protection Act. Act 451 of the 1994, being Sections 324.21101 to 324.21113 of the Michigan Compiled Laws Annotated. Any owner who knowingly fails to notify or submits false information is subject to a misdemeanor and/or civil penalties not to exceed \$5000 per day for each tank for which notification is not given or for which false information is

CTIONS: For permanent closure and change-in-service, complete all the information on this form and submit with the site pent analytical results, chain of custody and site sketch which indicates the location and depths of tanks, piping, and samples in must be received within 45 days of the samples being taken. The owner is required to keep a copy of the site assessment in a minimum of three years. See reverse side of this form for additional information.

FACILITY ID

I. OWNERSHIP OF TANKS	II. LOCATION OF TANKS
FOWNER (CORPORATION, INDIVIDUAL, ETC.)	FACILITY NAME OR COMPANY SITE IDENTIFIER
ADDRESS	STREET ADDRESS (PO BOX NOT ACCEPTABLE)
STATE ZIP CODE	CITY STATE
ODE & TELEPHONE NUMBER	CONTACT PERSON FOR LOCATION AREA CODE & TELE

Highlight – Changes - LPG

 Cylinder Rack storage, 10' from doorway or opening at places frequented by the public that have 2 means of egress or at a place not frequented by the public that only has 1 means of egress, and at least 20 feet to all FL/CL Motor Vehicle Fueling dispensers



• • Highlight – Changes - LPG

 Federal Department Of Transportation Cylinders in stationary service & filled on site must be inspected or requalified within 12 years of manufacturer & every 5 years there after. Cylinders past this date had 3 years (7/1/2011) to come into compliance with this rule





Highlight – Changes - LPG

 Tanks over 4,000 gallons water capacity (WC) or used for container fill must be equipped with pressure relief valve and within 10 years of installation or by 7/1/2011 and every 10 years thereafter perform visual relief valve inspections that is documented, including removal of stack, removal of foreign matter, and repair/replacement of damaged or deteriorated valves



Highlight – Changes - LPG

- Any new container over 4,000 gallons water capacity or used for dispensing to Motor Vehicles must meet Section 5.7.7.2 (A to G) of the Michigan Storage and Handling of Liquefied Petroleum Gas Rules for new installations (deals with internal valves, thermal actuation, and remote shutoffs)
- Any container above and already installed must meet the requirements listed in 5.7.7.2 as applicable by 7/1/2011









• • Highlight – Changes - LPG

- Within 1 year of hire, all employees handling LPG must have their respective National Certified Employee Training Program (CETP) certificate
- Only CETP employees can install or service LPG systems
- Transfer out of a tank must be authorized by the owner of the system, conducted by qualified personnel, have 2 day prior notice



Highlight – Changes - LPG

Required labeling on tank (2 of them)

- 1. No Smoking within 25 feet
- 2. Flammable gas

Fire Protection is required for sites over 4k, based on the Fire Safety Analysis





Highlight – Changes - LPG

 Required Warning signs at all filling locations 1. No Smoking-No Open Flame (3") 2. Warning: Filling the following types of cylinders (cyl) is prohibited and violators are subject to civil and criminal penalties: (i) cyl not approved for LP (ii) cyl more than 12 years old that have not been recertified



• • Highlight – Changes - LPG

 Required Warning signs (cont.) (iii) cyl which are damaged, burned, or which after a visual inspection, appear unsafe (iv) cyl that are not equipped with a collar or cap to protect the valves while in transit (1/4")



Highlight – Changes - LPG

- Applications are now allowed to be processed in 30 days versus 21.
- All Underground LPG tanks over 2,000 gallons WC individual or 4,000 gallons WC aggregate must be registered with ST&CU on a form provided.
- All underground LPG tanks used for container fill now have to submit applications for installation and pay fees.



• • Highlight – Changes - LPG

- All other underground LPG tanks must be documented for location and kept on file
- Bulk plants must maintain and have on file written operation and maintenance procedures



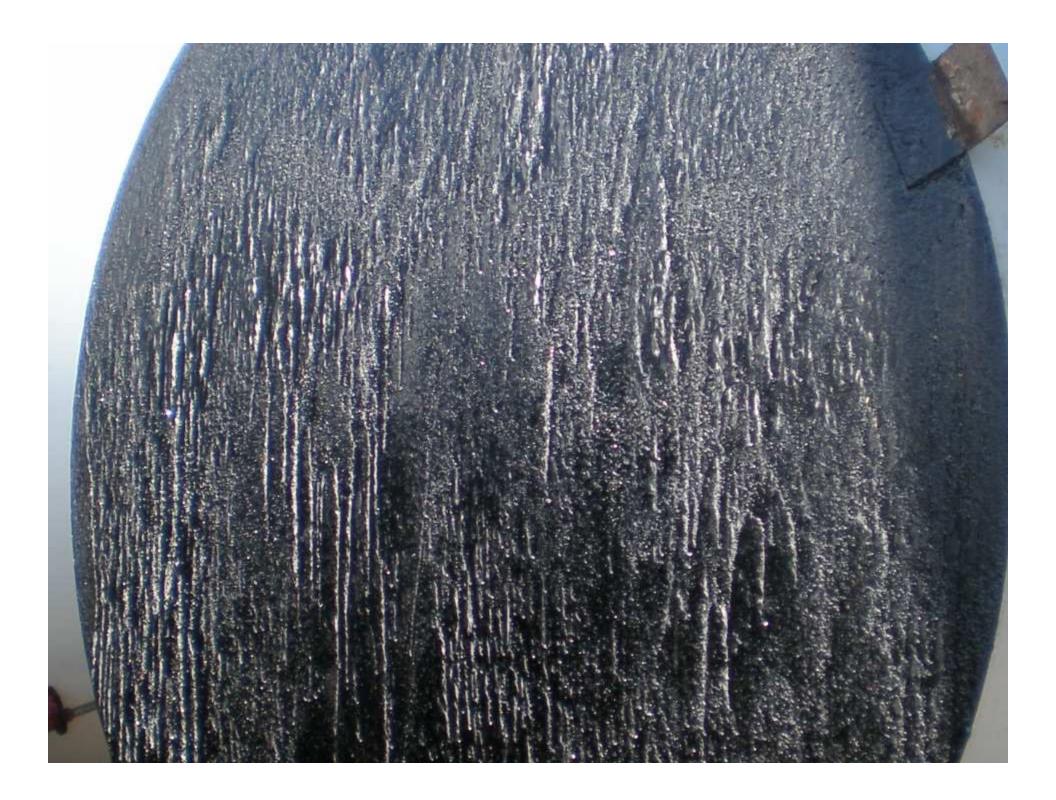


• • Highlight - Changes - FL/CL

• If the existing Aboveground Storage Tank (AST) has not been upgraded to one of the approved alternatives or is not already in compliance with the 2003 FL/CL Rules, it will be red tagged and required to either upgrade or be taken out of service. Upgrades include, spill and overfill protection, corrosion protection and/or liquid tight secondary containment.







• • Highlights - MUSTR Rules

- Recent amendments to the 1998/1999
 MUSTR took effect on June 27, 2008.
- All new tank and piping installations are required to be secondarily contained and monitored, including tanks for emergencygenerators.
- Repair of existing pipe, as long as its less than 50% of total pipe run, can use an approved like replacement (single wall fiberglass with single wall fiberglass)



• • • MUSTR Rules – Whats Next

The Federal Energy Act of 2005 requires that by August 8, 2012, every facility having one or more UST system that is subject to MUSTR must have a Class A Owner/Operator (O/O) and Designated B Operator.



• • • MUSTR Rules – Whats Next

Proposed Draft –

Class A Owner/Operator – Has primary responsibility for the facility per MUSTR, must possess a current passing International Codes Council (ICC) certificate indicating they have passed the Michigan Class A UST System Operator Exam by 8/8/2012.



• • MUSTR Rules – Whats Next

Class A Operator – Designates a certified Class B Operator for each site and notifies DEQ of such on a form provided, maintains list of all trained Class C employees, and maintains all records for minimum of 3 years. New owner is required to have Class A within 30 days of purchasing a station.



• • • MUSTR Rules – Whats Next

Class B Operator – Must maintain current certificate from ICC for Michigan Designated Class B Operator exam. This person conducts site visits and verifies operational compliance of all UST systems at the site. These visits are currently proposed to happen at least once every quarter, but that is subject to change.



• • • MUSTR Rules – Whats Next

Class B Operator – Prepare written records of site visit on form provided by MDEQ, sign, and supply to Class A O/O. Required to alert Class A O/O of any conditions that require attention discovered during the inspection to keep facility in compliance with MUSTR.



• • MUSTR Rules – Whats Next

Class C employee can be trained by Class B or via other methods (online course, third party trainer, etc.)

At least one trained Class C employee shall be present during all operational hours, unless site is an approved unattended operation.



• • • MUSTR Rules – Whats Next

New MUSTR Ad Hoc started in Winter of 2009 with the draft being completed in the fall of 2009 and which is currently going thru the rules promulgation process. These classification requirements and operator training will be part of those new rules. (Unknown date of implementation, all owners will be notified when it happens)



- o UST's:
- KEEP REGISTATION INFORMATION CURRENT
 - a) contact information
 - b) tank/piping information
 - c) release detection method(s)
- SIGNIFICANT OPERATIONAL COMPLIANCE:
 - a) overfill and overspill
 - b) tank and piping release detection records
 - c) corrosion protection records



- OTHER COMPLIANCE ISSUES
 - a) maintain all tank/dispenser containment sumps liquid tight
 - b) properly remove/dispose of accumulated liquids
 - c) maintain all hoses, nozzles, splashguards, breakaway devices, fire extinguishers, signage



- o FL/CL AST's:
- O GREATER THAN 1100 GALLONS:
 - a) vertical tanks on grade-upgrade requirement/overfill/overspill deadline was August 13, 2008, if American Petroleum Institute or Steel Tank Institute inspection performed, need copy of inspection report(s)
 - b) maintain corrosion protection on tanks/piping
 - c) labeling of tanks/fill risers
 - d) dispenser items-same as for ust's



- o FL/CL AST's:
- LESS THAN 1100 GALLONS:
 - a) maintain required separation distances from buildings/property lines-40' (some restrictions)
 - b) only tanks built to an approved standard allowed
 - c) electrical must meet code-no extension cords
 - d) vent and fill must be separate



- o FL/CL AST's (cont'd):
 - e) up to 3 tanks at one location-no manifolding of tanks
 - f) area where liquid dispensed must be protected by impervious surface
 - g) roofs/canopies allowed with conditions

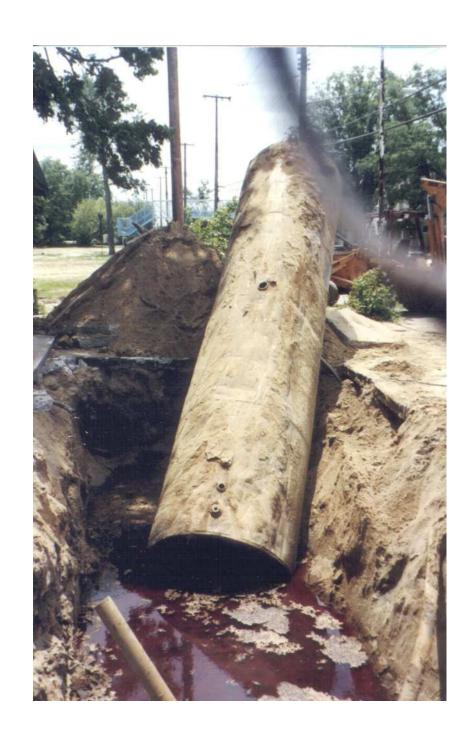


o LPG AST's:

- a) separation distances from buildings/property lines/point of transfer
- b) painting/labeling of tank/piping
- c) training for container fill operations
- d) keep any combustible material 10' from containers
- e) maintain emergency shutoff controls, fire extinguisher, hoses
- f) signage at container fill operations



















• • Question & Answer!?!?

- WHEN IN DOUBT...CALL YOUR LOCAL HAZARDOUS MATERIALS STORAGE INSPECTOR OR THE STORAGE TANK UNIT IN LANSING at 517-335-7211!!!
- Environmental Assistance Center 800-662-9278



• • Questions

You can submit questions using the question box on your webinar toolbar.



• • Wrap Up

- An on-line evaluation will be sent to you this afternoon via e-mail.
- Recording of webinar will be posted on-line.

